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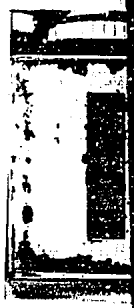

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REPORT ON SEVENTH SESSION OF THE ACADEMY OF MEDICAL SCIENCES USSR

Prof A. I. Nesterov

The Seventh Session of the Academy of Medical Sciences USSR, which took place recently, was devoted to discussion of preliminary reports on changes which have been brought about in the various fields of theoretical and clinical medicine in conformance with the resolutions of the 1950 Joint Session of the Academy of Sciences USSR and the Academy of Medical Sciences USSR.

N. N. Zhukov-Verezhnikov, vice-president of the Academy of Medical Sciences USSR, presented a report entitled: "Results of the Fulfillment by Academy of Medical Sciences of the Decree of the Scientific Session of the Academy of Sciences USSR and the Academy of Medical Sciences USSR, Dedicated to the Problems of the Physiological Teaching of I. P. Pavlov." and A. Z. Belousov, N. V. Konovalov, and G. N. Zilov gave a report entitled "On the Status and Perspectives of the Training and Distribution of Scientific Pedagogical Personnel Within the Public Health System of the USSR, in the Light of the Decree of the Scientific Session of the Academy of Sciences USSR and the Academy of Medical Sciences USSR, Dedicated to the Problem of the Physiological Teaching of I. P. Pavlov." Three other reports on physiology, and two reports on scientific-clinical themes also were heard.

The session was an excellent illustration of the postulate of Stalin that "...no science can develop and thrive without conflict of opinions; without free criticism." Open discussion, broad and free exchange of opinions and pointed criticism and self-criticism furthered correct evaluation of the fulfillment of the resolutions of the Joint Session, bringing to light important deficiencies and their causes, and leading to the development of a program of concrete measures for further development of scientific research.

According to the report of the Presidium, Academy of Medical Sciences, the session recorded that in conformance with the decree of the Joint Session the structure of basic scientific institutions of the academy was reviewed and significant changes were made in their organization; laboratories were expanded and new physiological, pathophysiological, and biochemical laboratories were created; the composition and distribution of scientific cadres was improved; and the connection between the scientific work of institutions of the Academy of Medical Sciences USSR and the tasks of Soviet public health practice was strengthened.

During the period covered by the report, scientific institutions of the academy worked on problems of physiology and pathology of higher nervous activity as well as on the second signal system and its interaction with the first signal system. The mechanism of development of the pathological process and disturbances of the trophic function of the nervous system, the functional interrelationship of the cerebral cortex with internal organs, nervous regulation of circulation, respiration and digestion, and other problems of physiology and clinical and prophylactic medicine also were studied.

In the Institute of Physiology, Academy of Medical Sciences USSR, new results were obtained on the physiological interrelationships between the processes of excitation and inhibition, and on the role of the process of inhibition in restoration of the functioning of the glands of the gastrointestinal tract.

In the Institute of Experimental Medicine, Academy of Medical Sciences USSR, valuable results were obtained pertaining to the development of the teaching of I. P. Pavlov on conditioned reflexes. P. S. Kupalov directed work on functional disorders of higher nervous activity in [various] types of neuroses, a field which is important to clinical practice.

The laboratories directed by A. G. Ivanov-Smolenskiy and N. I. Krasnogorskiy continued successfuel research on the interaction of the first and second signal systems.

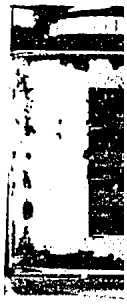
Research directed by academician K. M. Bykov and by M. A. Usiyevich, on the principles of interaction of higher portions of the central nervous system and the internal organ is significant for correct understanding of the pathogenesis of a series of diseases and for developing effective methods of therapy for them.

Many scientific institutions of the academy have been successful in creating experimental-biological models of several pathological processes.

Substantial progress has been made in studying the problems of immunology, and general, communal, and occupational hygiene from the viewpoint of Pavlovian nervism.

In the Institute [s] of Therapy and Neurology, Academy of Medical Sciences USSR, the question of the central-nervous mechanism of the development of high blood pressure was developed successfully. Methods for the prevention and therapy of this disease were planned on the basis of data obtained [in the above institutes].

The Institute of Obstetrics and Gynecology, Academy of Medical Sciences USSR developed and introduced into practice physiological methods of managing birth without pain, or with a minimum of birth pains.



A new method for preventing asphixiation of fetuses and newborn infants also was developed. A. P. Nikolayev, the man who did this work, was awarded the Stalin Prize in 1952.

The Institute of Surgery, Academy of Medical Sciences USSR, A. N. Bakulev, A. G. Savin, and P. A. Kupriyanov, Active Members of the Academy of Medical Sciences USSR, and A. I. Serebrov, corresponding member of the Academy of Medical Sciences USSR, developed new surgical methods based on physiological principles, which means a significant increase in the percentage of recoveries and a decrease in the percentage of mortality in the case of operative intervention in connection with such grave diseases as cancer of the lungs or esophagus, suppurative processes in the lungs or esophagus, cancer of the uterus, endarteritis obliterans, and others.

In 1952, the announcement of the award of the Stalin Prize to V. A. Negovskiy and his associates for their work on resuscitation of human beings under conditions of so-called clinical death received extensive publicity.

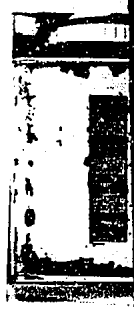
In the Institute of Pediatrics, Academy of Medical Sciences USSR, a new system of handling scarlet fever patients was developed under the direction of professor A. I. Dobrokhotova, which shortens the duration of hospitalization from 30 to 20 days. Also at this institute, a technique was developed for the use of the new Soviet antibiotic albomycin in the treatment of young children suffering with pneumonia. With the new method of therapy, the rate of mortality from this disease has decreased fourfold.

At the Institute of Tuberculosis, new methods of therapy of various forms of tuberculosis have been developed, in recent years under use of the new drugs streptomycin, PAS, and tibon. This has led to considerable improvement in the results of medical treatment of tuberculosis patients, with the result that the lives of tens of thousands have been saved.

At the same time [at the meeting], many substantial deficiencies were brought to light, and a program of measures was drawn up for the further development of scientific research, in conformance with the decree of the Joint Session.

The session noted that research in the field of higher nervous activity still is not satisfactory; development of fields such as study of the various types of higher nervous activity in the human being, the interrelationships of the first and second signal systems, and the significance of protective inhibition in clinical practice has been even less satisfactory. Several other deficiencies were noted; i.e., in research on pharmacology and experimental therapy, research on developing methods which conform to the physiological orientation in clinical practice, and work on several problems of infectious pathology which are important to public health practice.

The session noted that development of active methods of prophylaxis and treatment of many widespread diseases, such as influenza, measles, scarlet fever, and rheumatism is proceeding slowly. The presidim of the Academy did not organize multilateral research in the field of sleep therapy, and did not collate pertinent material which had accumulated. Up to now, scientific discussions have been inadequately utilized for profound and multilateral discussion of many important problems of theoretical and practical medicine. Several important achievements of scientific research work are being introduced into practice too slowly.



The session acknowledged that the basic causes of the deficiencies are unsatisfactory connection between the directing organs of the Academy of Medical Sciences and its scientific institutions, unsatisfactory control of fulfillment of the plans of scientific research, and a weak linking of the Presidium of the Academy of Medical Sciences with several administrations of the Ministry of Public Health USSR.

According to the decree of the session, the utmost development of research on the physiology and pathology of higher nervous activity is of prime importance. It is necessary that the physiological foundations of a medical treatment and preventive regime be developed for hospitals and prophylactic institutions, and a clinicophysiological methodology be developed which is applicable to the usual hospital conditions; attention must be focused on research on neuroses, the pathology of infectious processes, the development of prophylactic innoculations against influenza and measles, as well as development of new methods for treating dysentery, whooping cough, and many other diseases.

The session recommended that the Presidium and scientific institutions of the academy display extensive criticism and self-criticism in scientific work, and organize discussions in the near future, on such important medical problems as types of higher nervous activity in humans, problems of therapeutic sleep, problems of immunity, experimental therapy, problems of oncology, etc.

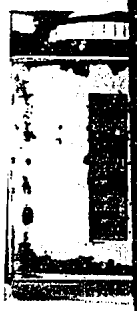
The session indicated the necessity of a considerable strengthening of the link between scientific institutions and laboratories of the academy and therapeutic-prophylactic institutions, with the aim of the quickest possible penetration of scientific achievements of the academy into public health practice.

The report of A. Z. Belousov, Assistant Minister of Public Health USSR, N. V. Konovalov, vice-president of the Academy of Medical Sciences USSR, and docent G. N. Zilov, gave a clear picture of the growth in numbers of scientific-medical personnel in connection with the great growth and development of scientific medicine in the USSR. Forty-eight active members, and 19 corresponding members of the Academy of Medical Sciences USSR are laureates of the Stalin Prize.

In recent years, the ideologicopolitical education of scientific personnel has improved considerably. This proved to be an important basis for raising the ideological level of scientific production of late. The training of scientific personnel in the fields of physiology, pathophysiology and pharmacology has been expanded. Some success has been attained in concentrating available scientific capacity for handling the most important problems.

The session noted that the work of the Ministry of Public Health USSR is unsatisfactory with respect to its compliance with the decree of the Joint Session of the two academies, on the publication of new texts for medical schools and issuance of methodological aids, and instructional motion pictures on physiology, pathophysiology, pharmacology, psychiatry, and several other specialties. The programs for anatomy, physiology, pathophysiology, psychiatry, and pharmacology still contain deficiencies, and consequently require some additional improvement.

The directors of scientific-research institutes and medical schools infrequently exhibit the necessary control and proper discrimination in the matter of selecting and training aspirants and doctoral candidates. As a result, a considerable number of aspirants terminate their course of instruction lacking an accepted candidate's dissertation, or their field of preparation is too narrow, so that on the whole they lack the necessary experience and knowledge for specialization.



There are serious deficiencies in the distribution and utilization of scientific personnel. In many institutions of the Academy of Medical Sciences USSR, the posts of scientific associates are filled by doctors and candidates of medical science, while in many peripheral universities (VUZ) many professorial chairs remain vacant because suitable specialists cannot be found to fill the vacancies.

Often serious gaps in ideologicopolitical education of scientific personnel prove to be the cause of an unsatisfactory ideological level of scientific research.

Up to this time, the Ministry of Public Health USSR and the Presidium, Academy of Medical Sciences did not have an appropriate prepared plan for the training of scientific personnel.

With the aim of eliminating deficiencies, the session drew up a series of organizational measures. The development of an adequate advance plan for training of scientific pedagogical personnel for each institute and medical school according to specialties and listing the needs in scientific personnel are recognized to be prime necessities.

The session decided that the majortiy of scientific personnel of medical schools must be trained by the appropriate chairs of those medical schools. Planning of the training of scientific workers through the level of aspirant and doctoral candidate in scientific research institutes must be improved.

The session gave recognition to the necessity of establishing a permanent staff of professors and instructors at higher educational institutions (VUZ) as well as the need of greater efficiency in utilization of members of the "assistant" category in scientific research, pedagogic activities, and other work.

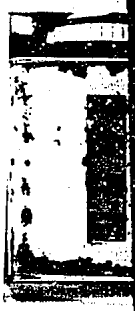
For more profound study of the bases of the physiological teaching of I. P. Pavlov, by scientific pedagogical workers, the session recommended that perpetual courses be organized on the basis of the Central Institute for the Advanced Training of Physicians (TsIU), the State Institutes for Advanced Training of Physicians (GIDUV) at Leningrad and Kiev, and also the Institutes of the Academy of Medical Sciences USSR.

The session acknowledged the necessity of publishing new texts in leading theoretical and clinical fields, based on the materialistic teachings of I. P. Pavlov.

The decree of the session noted the importance of further strengthening the staff of physiological and pathophysiological institutes and laboratories which are developing the basic problems of Pavlovian physiology.

Reports on physiological and clinical themes evoked great interest from those attending the session. The reports were a good illustration of Pavlov's hypothesis that, taken in the profound sense, physiology and medicine are inseparable.

V. N. Chernigovskiy, active member of the Academy of Medical Sciences USSR reported on the complex research of physiologists and clinicians, which was directed by him, in connection with problems important to clinical practice, such as the physiology of nervous regulation of the blood system, the role of the nervous system in the development of some pathological processes under



experimental and clinical conditions, the significance of nervous factors in the pathogenesis of acute pancreatitis, acute edema of the lungs, tuberculosis, endarteritis obliterans, and the importance of these factors in the therapy of the latter.

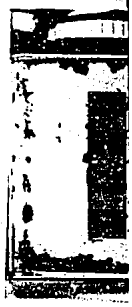
It was shown that the reflex mechanism is very important in the origination of leucocytosis following intramuscular injections of milk, in the case of mechanical irritation of the mucous membrane of the stomach through inflation (razduvanie) by means of a rubber balloon, and also in connection with the action of acetylcholine on the surface of the liver. It was proved that leucocytosis does not develop, despite the action of the irritation, under the conditions produced by introduction of milk into the muscle together with novocain, or by novocain anaesthesia of the mucous membrane prior to inflation; of by preliminary painting of the surface of the liver with novocain prior to the action of acetycholine on the liver.

These and a series of other experiments show that irritation, as well as exclusion [anaesthetization] of various receptor fields, may bring about a distinct modification of the blood, chiefly connected with fluctuations in blood distribution. Chronic experiments showed that in dogs with miniature stomachs (Heydenhain's method), hyperchronic anemia develops; but in dogs having miniature stomachs with preserved innervation (Pavlov's method), anemia does not develop. However, after systematic painting of the mucous membrane of the miniature stomach with a 10% solution of novocain (Pavlov's method), the dogs developed hyperchronic macrocytotic anemia. Thus, loss by the fundus portion of the stomach (a part of the stomach where, according to contemporary opinion, formation of the humoral antianemic factor originates) of its principal vagus innervation, leads to the development of exactly the same type of anemia as that which accompanies a deficiency of the antianemic factor. This, in the opinion of the author of the report, indicates that formation of the hemopoietic factor is under the control of the nervous system.

The experiments of scientific associate V. N. Chernigovskiy demonstrated the intensification of digestive leucocytosis under the influence of a fortification of the alimentary conditioned reflex, and disappearance of this leucocytosis after mutual interference (stolknoveniye) between the inhibition and excitation processes. If a lycopodium or carbolen mixture is introduced into the solar plexus of an animal, causing prolonged irritation, a temporary leucocytosis develops, the rate of precipitation of red blood cells increases, and the amount of diastase in the urine increases, which indicates that the pancreas in involved in the pathological process. These symptoms of affection of the gland disappear after a short time. However, the symptoms reappear if the animal is given a diet which includes fat. Such aggravation of the inflammatory process also develops in a gall bladder with a ligatured common bile duct if, following abatement of the inital inflammation connected with ligature of the duct, 30 grams of vegetable oil are introduced into the stomach through a stomach fistula, and this oil is immediately drained off through a duodenal fistula.

These experiments verify the hypothesis of a very close nervous linkage between the stomach, duodenum, gall bladder, and pancreas, and also support the hypothesis that an experimentally induced pathological process has the character of a nervous dystrophy.

In the earlier works of K. M. Bykov, A. V. Rikkl', V. M. Potapova, and V. N. Chernigovskiy, it was shown that preliminary severing of the vagus nerves could prevent labor emphysema, which develops when, for example, adrenalin is injected into the blood. Kann, an associate of V. N. Chernigovskiy, established that it is possible to avert labor emphysema



by setting up a novocain block in the neck at the right time. However, such an edema [emphysema] developed immediately and vigorously, if the central terminals of the vagus nerve of an animal which has been previously treated with a nonfatal dose of adrenalin, were irritated.

Summarizing the group of described observations, V. N. Chernigovskiy came to the conclusion that "in all experiments, together with the effects of unusual irritation, methods leading to the compensation of that irritation emerge. Inevitably, each of the local processes of this type passes over into a general [process], where the element that generalizes the process is the particular physiological measure which the organism moves to the first line of defense. It is scarcely necessary to guess the source of the compensation. There is no doubt that it is the nervous system.

"Actually, we see that further action on the nervous system may constitute the source of the 'collapse' of compensation. In Ugolev's experiment with pancreatite this [further action] was the effect of fat on the receptors of the stomach, and in Kann's experiment, irritation of the central terminals of the vagus nerves . . . . "

K. M. Bykov's position on the question to the effect that the same mechanism may, in one case, depending on its character and the conditions of its origination and action, play the role of a factor most important to the normal functioning of the organism, and in another case, under altered circumstances or because of a change in its intensity, become a pathological agent, has been confirmed by many other instructive experimental investigations. Among the latter are experiments on speeding up the development of and aggravating the clinico-anatomical syndrome of tuberculosis (influence of pain irritation and nembutal), experiments on the development of convulsive fits in connection with the action of oxygen (influence of varying doses of bromine and caffeine), and work on the treatment of endarteritis obliterans by intra-arterial injection of 150-200 ml of preserved citrate blood.

The report of A. V. Rikkl' also contained a summary of research on many problems which are important to clinical practice. The study of metabolism under conditions of fictitious and actual feeding disclosed the presence of both reflex and chemical phases in the specific dynamic action produced by food, with the additional important finding that increase in [metabolic] exchange resulting from an intensification of the conditioned reflex may exceed the increase in metabolism under the influence of a nonconditioned reflex. The intake of protein foods is the main signal for changes in protein metabolism, carbohydrate intake for changes in carbohydrate metabolism, etc. This emphasizes the regulatory influence of the cerebral cortex not only on the total gas metabolism, but also in relation to profound chemical transformations in the organism, which naturally is very important from the point of view of clinical practice.

Observations of newborn infants showed that the very act of nursing is of particular importance in increasing gas metabolism. They also indicated the importance of the influence of taste receptors and of reflex action on the mucous membrane of the stomach of the infant. Thus, the initial nursing is accompanied by a reflexive increase in gas metabolism, even if no milk is taken; sucking a soother is accompanied by a less intensive reflexive increase in gas metabolism. When the infant is nursed artificially from a bottle with a large aperture, so that little effort is required to obtain milk, there is no reflexive increase in gas metabolism.

Associates of A. V. Rikkl' succeeded in establishing the effect of time linkages on modifications of gas metabolism accompanying feeding of prematurely born infants. All the above data have substantial significance from the stand point of devising methods for the feeding of newborn infants.

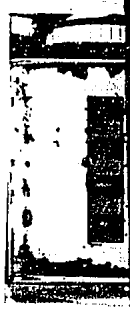
G. S. Belen'kiy, an associate of A. V. Rikkl', obtained naturally and artificially induced alimentary conditioned reflexes pertaining to modification of the morphological constitution of the blood. Krachkovskiy demonstrated that digestive leucocytosis in newborn infants is not an inborn reaction, but is time-linked and acquired, forming within 8 to 9 days after birth. Modification of blood distribution under the influence of cortical impulses is a basic component of the above-mentioned short-term blood modifications. Participation of the hemopoietic factor in changes of the morphological composition of the blood which are of longer duration is significant.

In a series of special investigations, it was established that it is possible to evoke hemolytic anemia experimentally in dogs with a fistulated pancreas by feeding to them a large quantity of meat. The cause of pathological hemolysis in the above circumstances is a sharp rise in the enzyme content of the blood, accompanied by very high enzymatic activity of the pancreatic juice, since anemia does not develop under conditions of weak enzymatic activity. In the opinion of the author, based on these data, this existence of a specific hemopoietic factor is in doubt.

Another group of investigations strengthened the functional linking of the intestine with the stomach, liver, and pancreas. Under certain conditions, irritation of the receptors of the intestine may lead to a series of functional modifications of the indicated organs, and to future gastric ulcers.

The study of cortical regulation of the cardiovascular system uncovered many facts which are important to clinical practice. It was found that irritants of the second signal system may prove to be stronger factors in the development of pain and temperature induced vascular reflexes, than are noncon-ditioned irritants. It was shown, further, that verbal irritants evoke vascular reactions corresponding to the action of irritants of the first signal system. It was established that the cerebral cortex has the leading role in the forming of temperature and pain reception of the skin.

M. A. Usiyevish, director of the Insititute of Physiology of the Academy of Medical Sciences USSR, gave a synopsis of basic facts obtained at his institute on the interrelationships which arise between functional modifications in the cerebral hemispheres and the activity of internal organs. L. S. Cracheva, associate of the Institute, asserted in her report, that the character of secretory activity of the stomach of the dog depends on the type of its nervous system; in animals with an inert type of nervous system, a change in external conditions (i.e., fastening an apparatus to the jaw of the animal) is accom-panied by small reductions in the latent period of gastric secretion, in the amount secreted, and in the digestive capacity [concentration] and acidity of the gastric juice; in animals of the excitable type, such an environmental change is accompanied by a marked prolongation (32%) of the latent period of gastric secretion, while the quantity of gastric juice decreases 200% and its acidity and digestive capacity increase somewhat. The facts observed show and modification of the functional condition of the large hemispheres is reflected distinctly in various aspects of the activity of the complex secretory apparatus of the stomach: first, synthesis of hydrochloric acid diminishes and the diges-tive capacity of gastric juice simultaneously increases, with a compensating decrease in its acidity due to its intensified digestive capacity.

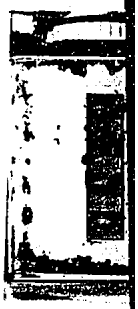


Research by T. P. Borisova and V. I. Grachev has shown that the functional condition of the higher divisions of the brain affects the work of the stomach even under conditions when the action would seem to be due to purely chemical irritations (e.g. insertion of 200 grams of meat into the stomach without having the dog notice it.) In studying qualitative changes in gastric juice liberated in the second phase of gastric secretion, V. I. Grachev discovered that acidity and digestive capacity vary, depending on the various functional conditions of the cerebral cortex (e.g. digestive capacity increased under pronounced conditions of inhibition in the activity of the cortex). This confirms Pavlov's hypothesis on the significance of inhibition as a factor instrumental to the processes of assimilation and regeneration.

K. Ya. Tur conducted experimental research on the role of indifferent distant irritants (associated with each other in time) in the periodic activity of the stomach. The author established a significant lability of periodic activity of the stomach in connection with variations in environmental conditions and simultaneous high plasticity in the functioning of the cerebral hemispheres, insuring rapid repair of damages to this function. The research of K. Ya. Tur and I. Z. Zachinyayeva showed that indifferent distant irritants such as light and sound, associated in time and based exclusively on orientation reactions of experimental animals, impose various deviations in the character of the activity of the stomach. This includes lengthening of pauses between periods of activity, lengthening of the periods of work, distrubance of the coordination of action between adjacent members of the digestive tract (for example continuation of hunger peristalsis of the duodenum in the absence of any movement of the stomach) Such distrubance of coordination of adjacent portions of the digestive system apparently reflects conflicts between processes of stimulation and inhibition in the cerebral cortex which arise under experimentally created stereotype disturbances, and most of the distinct disturbances are pronounced in animals with unbalanced, or weak types of nervous systems.

The report of M. A. Usiyevich contained data of great importance to clinical pathology. At the present time, many facts have been accumulated in clinical pathology which support Pavlov's position on the predominant role of the higher divisions of the brain in the regulation of the internal functions of the organism.

The report of M. V. Chernorutskiy, active member of the Academy of Medical Sciences USSR, was devoted to the problem of the corticovisceral pathogenesis of ulcerous diseases. According to the observations of the group headed by Chernorutskiy, the basic pathogenic factor in the development of ulcerous diseases is affection of the function of the cerebral cortex, brought about by excessive strain of nervous processes. In an already developed ulcerous disease, the functional condition of the cerebral cortex is characterized by disturbance of the balance of the processes of excitation and inhibition, which is expressed particularly clearly in more acute forms of the illness. Study of the functional condition of subcortical vegetative centers with the aid of vestibular chronaxia and tests of the excitability of the vestibular apparatus disclosed an increase in the tonus of these centers; affection or distortion of their functions are also indicated by results of the diencephalic test, and by results of basic and carbohydrate metabolism tests. Persons afflicted with an ulcerous disease may be divided into three groups, based on the functional condition of their vegetative nervous system; each group has a dynamic characteristic, which reflects the great functional lability of the vegetative nervous system, and which in turn depends on the condition of the cerebral cortex. Affection of the functions of the cerebral cortex in ulcerous diseases necessarily results in a disturbance of the activity of subcortical vegetative centers and of the whole vegetative nervous system. It consequently modifies the activity of internal organs.



Comparative observations permitted the author to formulate a series of theses establishing the identical nature of cortico-subcortical interrelationships in ulcerous and hypertonic diseases, and diversity in the functional condition of sympathetic and parasympathetic divisions of the vegetative nervous system, depending on the particular character of the affection of cortical regulation in these illnesses: predominance of symptoms of excitation of the parasympathetic innervation combined with suppression of the sympathetic system in ulcerous disease, and the opposite relationships in hypertonic disease. Thus, the common initial mechanism of the above two diseases changes to differentiation in their subsequent development, primarily because of different conditions and changes in the subdivisions of the vegetative nervous system.

In conformance with the [official] position on the leading role of functional disturbances of the nervous system and of definite corticovisceral interrelationships in the pathogenesis of ulcerous diseases, the author formulated several requirements for directed application of therapeutic-prophylactic measures. These include elimination of unfavorable environmental conditions (unfavorable living conditions and situations leading to conflict), purposeful action exerted on the disturbed functional condition of various divisions of the nervous system (sedative therapy, i.e., bromides, atropine, assistance of protective inhibition, stimulative therapy including caffeine, etc.). The author acknowledged the great theoretical and practical significance of the treatment of ulcerous disease with prolonged sleep, under the influence of which the majority of recoveries are more clearly defined and more rapid than with all other therapeutic means, and which results in recovery or improvement of the damaged functional condition of all sections of the nervous system, particularly diminution or disappearance of neurotic symtoms.

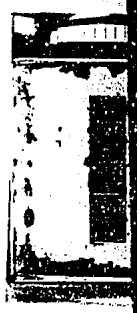
A basic indication for therapeutic sleep is slackening of the functional condition of the cerebral cortex. Since this state of higher nervous activity is a leading pathogenic factor in the development of ulcerous disease, therapeutic sleep may be considered essential for the treatment of all patients thus afflicted.

The report of A. L. Myasnikov, active member of the Academy of Medical Sciences USSR, on the pathogenesis and therapy of hypertonic disease attracted great attention on the part of the members attending the session. Part of his report concerned research on hypertonic diseases conducted at the Institute of Therapy, Academy of Medical Sciences USSR, and several other institutions. This work has been described already by A. L. Myasnikov in earlier articles which appeared in Terapevticheskiy Arkhiv.

The problem of the therapy of hypertonic diseases formed a considerable part of Myasnikov's report. The main link in this therapy, according to the opinion of the author, is elimination or reduction of disturbances of higher nervous activity.

Myasnikov called attention to the sympathicotonic pattern of hypertonic crises. These patterns appear more clearly in brief and early crises; and are less severe, but of longer duration in hypertonic crises of Type II. The crises are accompanied by an increase in the amount of adrenergic substances in the blood, and there also is an increase in the amount of adrenalin (or arterenol, in crises of Type II) in the urine after the crisis.

Hypertonic crises conditioned by disturbances of higher nervous activity also are accompanied by pronounced vegetative disturbances. This is the author's basis for using therapeutic measures which are directed at decreasing the activity of the sympathetic innervation (surgical intervention, partial ligature of the neurovascular bundles of the temporal region, novocain zonal block of the skin of the head, application of sympatholytan, Titayev's antisympathin, etc.).



Positive results were obtained by the Institute of Therapy in differential therapy of climacteric hypertonia with the aid of progesterone in the first phase, and folliculin (synestrol) in the second phase of the climacterium. As a rule, complex therapy, both hormonal and sedative, is required.

In the discussion of the aforementioned report, academician K. M. Bykov pointed out that there is a weak connection between theoretical and clinical research, and that the influence of scientific research on medical matters is insufficient. He also noted insufficient development of the problems concerning types of nervous systems, and concerning the second signal system, which are important for the correct organization of medical practice and for a physician's activity. Academician Bykov mentioned the slow and unsatisfactory development of research on the physiology of [industrial] labor, physical culture, school hygiene, balneology, neurology and psychiatry, pediatrics and pathophysiology, and also insufficiencies in the training of personnel. Several of Bykov's remarks were poorly founded.

In the discussion of the physiological and clinical reports, 16 persons made comments elaborating on the reports, but for the most part they presented their own observations which has a bearing on the theses of the original reports. B. A. Dolgo-Saburov reported on peculiar, profound morphological changes in the receptor apparatuses of several vascular zones, which arise under the influence of various irritations originating in the external and internal environments of the organism.

K. A. Shchukarev's report warned of one-sidedness in evaluating factors in the study of the pathogenesis of intestinal ulcers if the dietary regimen is not taken into account.

N. N. Gorev reported on the mechanism of affection of the function of the kidneys in experimental hypertonia. The first stage of experimental hypertonia is characterized by temporary modifications of kidney function, particularly the blood circulation; strong affection of the renal circulation and, consequently, considerable involvement of renal humoral factor occurs in much later stages of the disease. According to N. N. Gorev's data, the action of the renal humoral factor is of a neuroreflexive nature.

N. I. Nikolayev, in his report, stated that the peripheral blood picture is regulated by the cerebral cortex, with the sympathetic nervous system as the link which exerts the effect; changes in hemopoiesis are connected with deviations in the trophic function of the nervous system.

The session heard many other supporting comments, including those by I. Ya. Razdol'skiy, F. A. Andreyev, S. D. Kaminskiy, B. V. Ognev, A. A. Bagdasarov, and others.

The report of A. G. Ivanov-Smolenskiy, active member of the Academy of Medical Sciences USSR, attracted great attention. Ivanov-Smolenskiy gave a high valuation to the reports of V. N. Chernigovskiy and M. A. Usiyevich, and criticized several hypotheses and statements contained in the report of A. V. Rikkl' (the concept of cortical regulation, the maturation of nonconditioned associations and nonconditioned reflexes in newborn infants, the concept of linkage in time and others).

Ivanov-Smolenskiy appealed for unified endeavor to bring about an appropriate development of the scientific heritage of I. P. Pavlov for the welfare of the people and to the profit of USSR physiology and medicine.

The Seventh Session of the Academy of Medical Sciences USSR was an important event. It will influence the further development of Soviet medical science along the lines of the teachings of I. P. Pavlov.

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